

**REMARKS**

Claims 1, 4-8, and 11-15 are currently pending in the present application. Claims 1 and 8 are independent with Claims 4-7 depending directly or ultimately from Claim 1 and Claims 11-15 depending directly or ultimately from Claim 8. No claim amendments have been made in this Response.

Claims 2, 3, 9 and 10 have been cancelled in response to previous actions.

Claims 16-26 have been withdrawn from consideration.

**REJECTIONS UNDER 35 U.S.C. 103**

In paragraph 2 of the Office Action, Claims 1, 4, 6-8, 11, 13 and 14 have been rejected as being unpatentable over Chung, et al. (U.S. Patent No. 6,836,070; "Chung") in view of Otto, et al. (U.S. Patent No. 5,643,638; "Otto").

In paragraph 3 of the Office Action, Claims 1, 4-8, and 11-14 have been rejected as being unpatentable over Graff, et al. (U.S. Patent No. 6,492,026; "Graff") in view of Otto.

In paragraph 4 of the Office Action, Claims 1, 4-5, 7, 8 and 11-15 have been rejected as being unpatentable over Silvernail (U.S. Patent No. 6,576,351; "Silvernail") in view of Otto.

Each of the two independent claims, Claim 1 and Claim 8, recite the limitation of a "diffusion-inhibiting barrier[ ] compris[ing] a material, the composition of which varies substantially continuously across a thickness thereof" (referred to hereinafter as a

“Graded Diffusion Barrier”). In each of the above 3 sets of rejections, the examiner attempts to show that the respective claims are unpatentable by relying on Otto for teaching a Graded Diffusion Barrier. However, as shown below, Otto does not teach a Graded Diffusion Barrier.

Otto is deficient as prior art for teaching a Graded Diffusion Barrier for at least the following reasons:

**(1) Otto specifically teaches away from a continuous PECVD method.** At col. 2 ll. 59-66 and col. 3 ll. 27-35 Otto teaches a “Plasma Pulse CVD Method” in which the power parameters of pulse amplitude, pulse width, and pulse interval are changed and that “[t]his is in contrast to the state of the art for continuous [CVD] methods. (col. 2 ll. 62-63) As discussed below, Otto discloses depositing multiple layers where each layer has a constant composition and therefore does not meet the claim limitation of a diffusion-inhibiting barrier having a composition which “varies substantially continuously across a thickness thereof” which suggests the use of a continuous PECVD method.

**(2) Otto teaches depositing single layers of differing composition to obtain a gradient, rather than depositing one layer that varies substantially continuously.** Otto states unequivocally that “By using the plasma pulse CVD method according to the invention, elementary layers (single layers) of different composition can be deposited.” (col. 3 ll. 27-29) Moreover, Otto unambiguously points out that “Gradient layers having

constant composition but changeable physical/chemical characteristics can be produced.” (col. 4 ll. 8-10; emphasis added). Therefore, the Otto coating/methodology is emphatically **not** a Graded Diffusion Barrier, but is merely a method of laying down a multilayered coating.

**(3) The graded layer of Otto is not a “diffusion-inhibiting barrier”.** No where in Otto is there any mention that a coating deposited using the Plasma Pulse CVD Method has any diffusion inhibiting properties, any concern of preventing oxygen or water vapor diffusion, or any indication that preventing diffusion is even a minor consideration. To the contrary, Otto only mentions scratch protective coatings (col. 4 ll. 37-45), adhesion improving layers (col. 4 ll. 65-67), and primer coatings (col. 5 ll. 12-13). Furthermore, none of the four examples in Otto mention diffusion-inhibiting properties. The only use identified for Otto’s coating is for spectacle lenses (col. 4 ll. 43-50). Indeed, the examiner apparently acquiesces to this fact by failing to indicate anywhere in Otto that the Otto coating is a diffusion-inhibiting barrier. The examiner merely states in the Office Action that “[s]aid coatings allows (sic) the user to vary the characteristics of the coating, better adherence and hardness (col. 1, lines 18+) . . . .”

**(4) The specific physical and/or chemical characteristics of the gradient layers taught by Otto do not include diffusion-inhibiting properties.** The physical/chemical characteristics taught by Otto are refractive index, hardness, internal stress, hydrophily or general wetting ability, module of elasticity, etc. (col. 4 ll. 5-8);

scratch protection coating (col. 4 ll. 37-39); adhesion improving layer (col. 4 ll. 65-67); and a primer coating (col. 5 ll. 12-17). Again, there is no teaching, suggestion, motivation, or even mention anywhere in Otto that the Plasma Pulse CVD Method produces a diffusion-inhibiting barrier.

**(5) Otto discusses adding oxygen to the coating gas.** Otto teaches that where the layer-forming substance does not contain an adequate number of oxygen atoms that oxygen should be added to the coating gas (col. 4 ll. 52-54). However, adding oxygen to the coating gas will undermine the purpose of having a diffusion-inhibiting barrier when the diffusion-inhibiting barrier is being deposited on a component that is sensitive to oxygen (i.e., the oxygen added to the coating gas will react with the component being coated thereby resulting in detrimental degradation of the component). Thus, it is clear that Otto does not contemplate depositing a diffusion-inhibiting barrier or a Graded Diffusion Barrier as claimed.

For at least the above reasons, Otto fails to teach or suggest a Graded Diffusion Barrier as required by the claims in the instant application. Therefore, the rejection of the claims is improper and must be withdrawn. Accordingly, Applicant respectfully requests that the rejections be withdrawn and the application allowed.

### CONCLUSION

Each of the two independent claims, Claim 1 and Claim 8, recite the limitation of a "Graded Diffusion Barrier". Otto does not teach a Graded Diffusion Barrier.

Therefore, the rejections are improper and independent Claims 1 and 8 are allowable over the cited art. Claims 4-7 depend directly or ultimately from Claim 1 and Claims 11-15 depend directly or ultimately from Claim 8, and therefore each dependent claim is allowable along with its respective independent claim without reference to the additional patentable limitations contained respectively therein.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to **Deposit Account No. 04-1679**.

Respectfully submitted,

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Mark C. Comtois    Reg. No. 46,285

DUANE MORRIS LLP  
505 9th Street, N.W., Suite 1000  
Washington, DC 20004  
Telephone: (202) 776-7800  
Facsimile: (202) 776-7801

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